

# **PRODUCT DESCRIPTION DOCUMENT**

## **Experimental Probabilistic Hurricane Storm Surge**

**APPROVED** Signed by D. McCarthy **Date:** 4/28/06  
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## Experimental Probabilistic Hurricane Storm Surge

### Part I - Mission Connection

- a. Product Description - The experimental Probabilistic Hurricane Storm Surge product consists of two graphics for the Gulf of Mexico and the Eastern Atlantic coastal areas. The first graphic shows probabilities, in percent, of storm surge exceeding 5 feet. The second graphic indicates there is a 10 percent chance of the displayed storm surge heights being exceeded. These storm surge graphics are based upon an ensemble of Sea, Lake, and Overland Surge from Hurricanes (SLOSH) model runs using the National Hurricane Center (NHC) official advisory and accounts for track, size, and intensity errors based on historical errors. Additional information on the SLOSH model can be found at: <http://www.nhc.noaa.gov/HAW2/english/surge/slosh.shtml>.
- b. Purpose – The experimental product is intended to provide users with information which enhances their ability to make preparedness decisions specific to their own situations. Customers have requested additional tropical cyclone probabilistic information, and the National Research Council's Fair Weather Report encourages probabilistic products. An experimental period will be conducted from June 1– November 30, 2006, to receive input from users to determine the benefits and usefulness of the product and the product formats.
- c. Audience – The emergency management community is the primary target audience. However, this product will also be widely used by other federal, state, and local government agencies; media; maritime interests; and the general public.
- d. Presentation Format –Graphics will be displayed on the Internet as .png files at: <http://www.weather.gov/mdl/psurge>. Data can be downloaded in GRIB2 and ESRI shape file formats.
- e. Feedback Method – We will solicit comments through an online NWS Customer Survey at <http://www.weather.gov/survey/nws-survey.php?code=phss>

In addition we will receive continuous feedback via email at [nws.psurge@noaa.gov](mailto:nws.psurge@noaa.gov).

Technical questions may be addressed to:

National Weather Service  
Attn: Arthur Taylor  
W/OST25  
1325 East-West Highway  
Silver Spring, MD 20910  
e-mail: [arthur.taylor@noaa.gov](mailto:arthur.taylor@noaa.gov)

Policy questions may be addressed to:

National Weather Service  
Attn: Scott Kiser

W/OS21  
1325 East West Highway  
Silver Spring, MD 20910  
e-mail to: [scott.kiser@noaa.gov](mailto:scott.kiser@noaa.gov)

## **Part II - Technical Description**

- a. Format & Science Basis - The experimental Probabilistic Hurricane Storm Surge product is a statistical combination of an ensemble of SLOSH model runs. All ensemble members are based on the current NHC tropical cyclone advisory. Ensemble members take into account historical error characteristics by varying input parameters such as forward speed, cross track location, radius of maximum wind, and hurricane intensity. Two types of probability values are produced: cumulative probabilities and exceedance heights. The cumulative probabilities indicate the overall chance that storm surges will be more than 5 feet above normal tide levels at a given location during the hurricane. The exceedance height is the storm surge height, above normal tide levels, such that there's a 10 percent chance of exceeding it. Product images are generated in .png format.
- b. Product Availability - The experimental product is available whenever a hurricane is forecasted to make landfall within 24 hours. Updates to the product are produced one hour after the issuance of routine NHC tropical cyclone advisories (03, 09, 15, and 21 Coordinated Universal Time – UTC). Please note that due to the experimental status of the product, routine and timely dissemination will not be guaranteed.

An example of the product is available at: <http://www.weather.gov/mdl/psurge>

- c. Additional Information  
A full description of other NWS Tropical Cyclone Weather Services Program Products is provided in NWSI 10-601, which is available on the Internet at:  
<http://www.weather.gov/directives/sym/pd01006001curr.pdf>